Montana Bald Eagle Status Report 2009

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In Cooperation with the Montana Bald Eagle Working Group

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INTRODUCTION

The bald eagle population in Montana is considered one of the most productive populations in the western United States (Steenhoff 1990). In 1994, when the Montana Bald Eagle Management Plan was completed, Montana had approximately 156 active bald eagle territories. Population models estimated that Montana could support as many as 345 occupied territories by the year 2033 if sufficient habitat existed (MBEWG 1994). In 2006, Montana's population surpassed this population target with 352 occupied territories, over 25 years earlier than predicted. As of 2008, Montana had approximately 490 occupied bald eagle territories and targets set by biologists for individual recovery zones were exceeded by 4 to 7 times the recovery goals (Fig. 1).

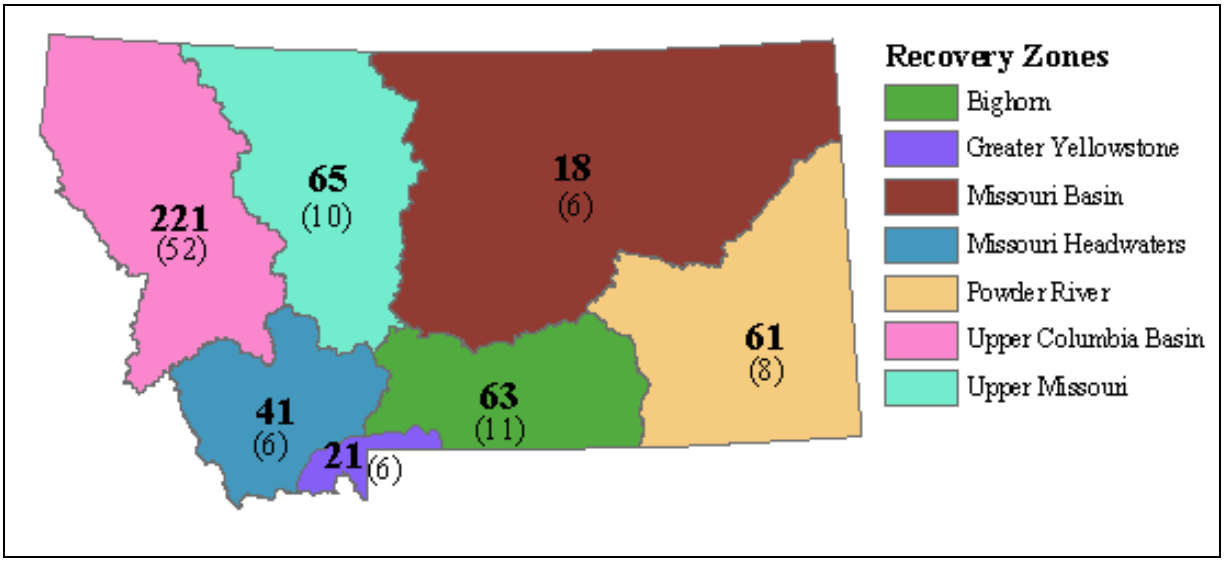

Figure 1. Estimated number of breeding territories by recovery area for 2008. Recovery goals cited in the 1994 Montana Bald Eagle Management Plan are in parentheses.

Other western states also experienced growth beyond predicted carrying capacity. For example, Washington grew from 104 occupied territories in 1980 to 840 in 2005 surpassing estimated carrying capacity (Stinson et al. 2007). Nationwide population growth followed the same trend, which prompted the U. S. Fish and Wildlife Service to first petition for the removal of the bald eagle from the Endangered Species List in 1999. It was removed in August 2007. The bald eagle's removal from the List of Endangered Species is a species conservation success story; however, increases in human population growth and development may still threaten bald eagle nesting, foraging and roosting habitat. This report provides important ecological information for the management and conservation of bald eagle populations and their habitat in Montana and is intended to supplement the 1994 Montana Bald Eagle Management Plan and the 2010 Montana Bald Eagle Management Guidelines.

CONSERVATION AND MANAGEMENT

Status and Rankings

The current global ranking for the bald eagle is G5, demonstrably secure, while the state ranking is vulnerable (S3) (NatureServe 2005). The bald eagle was removed from the federal list of Threatened and Endangered Species in August of 2007, except the Sonoran Desert population of central Arizona, which remains listed. The bald eagle is currently classified as a Tier 1 species in the Comprehensive Fish and Wildlife Conservation Strategy and as a Species of Concern in Montana.

Federal and State Protection

Although bald eagles no longer receive protection from the Endangered Species Act, two pieces of federal legislation still provide protection, the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The Bald and Golden Eagle Protection Act prohibits take (which includes disturbance) of bald eagles or bald eagle parts (e.g. body parts, nests, eggs, etc.) without a permit issued by USFWS. The Migratory Bird Treaty Act (MBTA) prohibits take of any migratory bird or any part of a nest, or egg except when permitted (such as waterfowl hunting licenses, falconry licenses, or bird banding permits). In addition to federal protection, Montana provides protection for the bald eagle through its Nongame and Endangered Species Act (MCA 87-5). Recommendations for minimizing disturbance to eagles and reducing the potential of violating provisions of the Bald and Golden Eagle Act are provided in the 2010 Montana Bald Eagle Management Guidelines (available at http://fwp.mt.gov).

DISTRIBUTION

The bald eagle is the only species in the genus *Haliaeetus* found in North America. They breed throughout the continental US, Alaska, and Canada. The greatest concentrations occur in the states surrounding the Great Lakes, Florida, and Pacific Northwest States (Fig. 2). After a nationwide ban on the pesticide DDT, bald eagles across the continental United States experienced dramatic expansions in numbers and distribution. Within Montana, distributions expanded south and east with the highest concentrations of nesting territories occurring west of the continental divide from the Bitterroot Valley north to the Canadian border (Fig. 3).

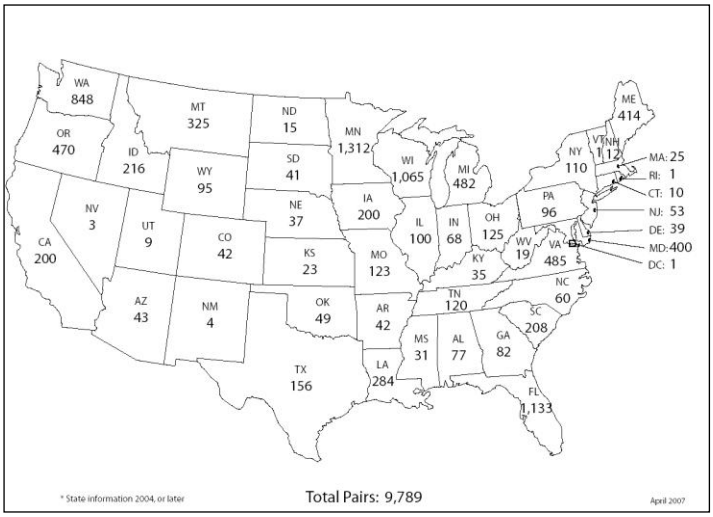

Figure 2. Breeding pair estimates for bald eagles in the lower 48 states (USFWS 2007).

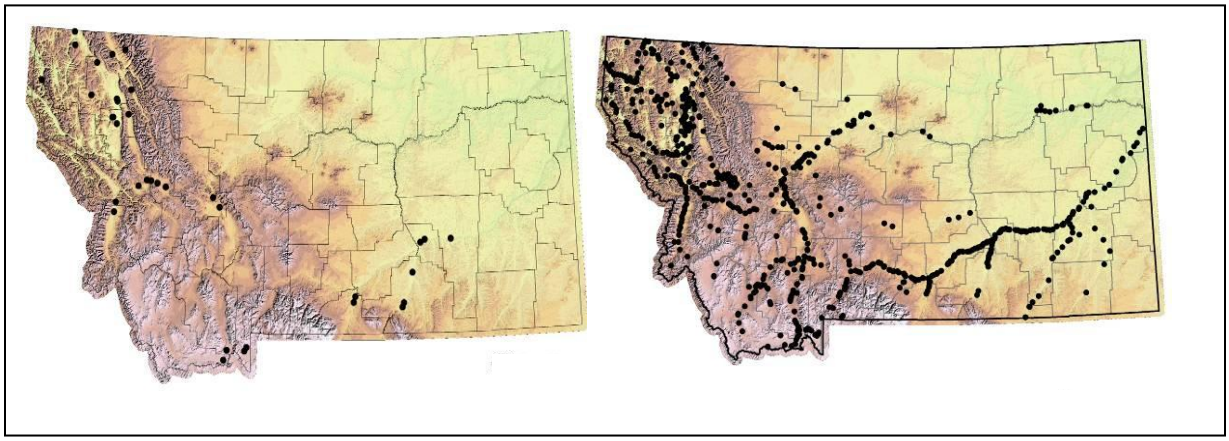

Figure 3. Distribution of current and historic bald eagle territories in Montana for 1980 (left) and 2008 (right). Maps by Kristi DuBois.

HABITAT

Breeding

Healthy bald eagle populations in Montana can only be maintained through proactive conservation and management strategies that provide the suite of habitat components necessary for eagles. This includes current, alternate, and suitable nest territories as well as important winter, migration, and foraging habitat. Throughout their range bald eagles select territories with tall snags or live trees with horizontal limbs capable of supporting large, heavy nests and providing perches and roosts, but have been known to nest in short trees, human-made structures (e.g. osprey platforms, cellular towers), cliffs, and other substrates. In Montana, Jensen (1988) documented bald eagles nesting in the following tree species: ponderosa pine, black cottonwood, plains cottonwood, narrowleaf cottonwood, western larch, Douglas fir, and lodgepole pine. Nest trees averaged 99.7 feet in height and 37.8 inches in diameter at breast height (DBH). The average distance from the nest to water was 738 feet. Therefore, removal or loss of large trees in close proximity to water may restrict availability of preferred nesting substrates for bald eagles.

Wintering and Migration

During diurnal migration bald eagles will roost in any tree of adequate size especially in location with little human disturbance (Harmata 2002). Although large communal roosts are not common in Montana bald eagles do congregate in areas with concentrated prey species (e.g. fish, waterfowl, ground squirrels, ungulate carcasses/offal, etc.). Glacier National Park and Hauser Reservoir were stopover concentration areas in the late 1900s because of introduced Kokanee salmon, but bald eagle use of these sites has decreased in recent years concomitantly with a decrease in salmon numbers.

POPULATION

The bald eagle nesting population in Montana has increased dramatically since the early 1980s and is currently about 490 occupied territories (Fig. 4). This growth was influenced by the federal ban on DDT and the bald eagle's listing under the Endangered Species Act. Based on annual territory surveys, the population appears to be increasing at a rate of about 10 % per year with the population growth rate ranging between 0.89 and 1.30. The only year from 1980-2008 that Montana experienced a decrease in the number of territories was in 1987 (Fig 4.). The most dramatic population increase occurred in Upper Columbia Basin (includes northwestern Montana) where numbers increased from less than 20 territories in 1980 to nearly 200 in 2008 (Fig. 5). Alone, the Upper Columbia Basin accounts for approximately 40% of Montana's nesting territories. As available habitat becomes saturated competition for resources will increase. Thus we expect the population will eventually stabilize.

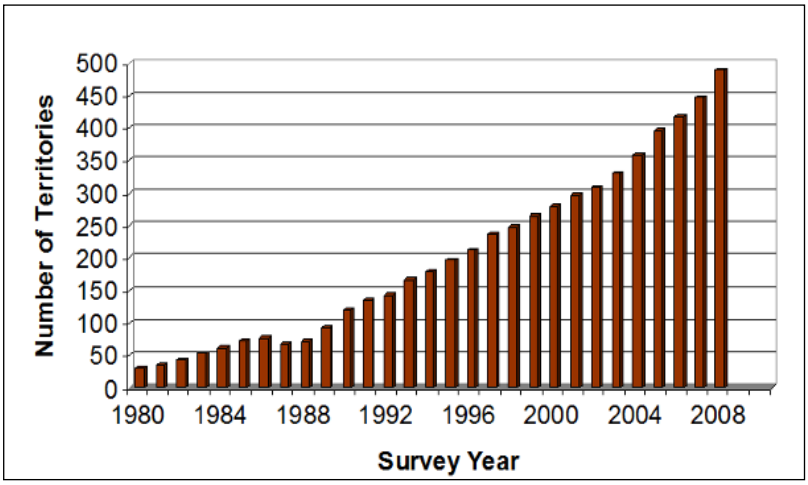

Figure 4. Number of bald eagle territories in Montana, 1980-2008.

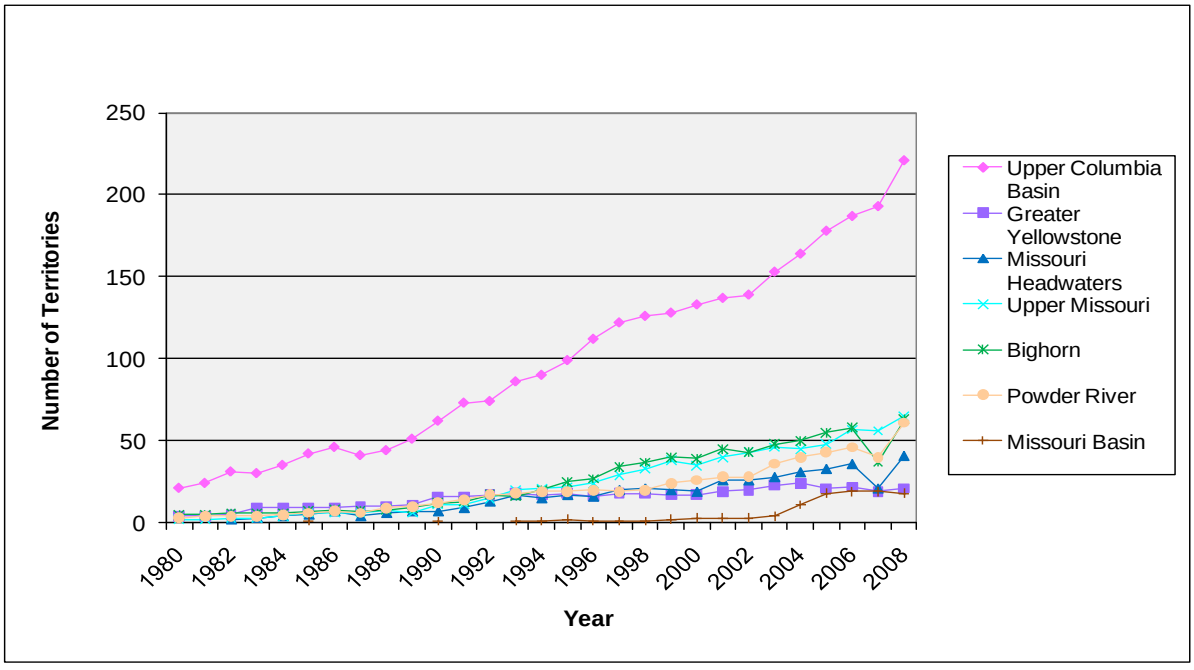

Figure 5. Bald eagle population growth by Recovery Zone in Montana, 1980-2008.

CURRENT AND FUTURE THREATS

Human Population Growth

Approximately 85% of the bald eagle territories in Montana occur in counties with increasing human populations (Fig. 6). Human population growth often translates into increased development. Many new subdivisions are proposed along riverfronts and lakeshores in crucial bald eagle nesting habitat because these are desirable places to live. With around 75% of bald eagle nests located within ¼ mile of water (lakes and rivers) the risk for individual and population level impacts remains a justifiable concern.

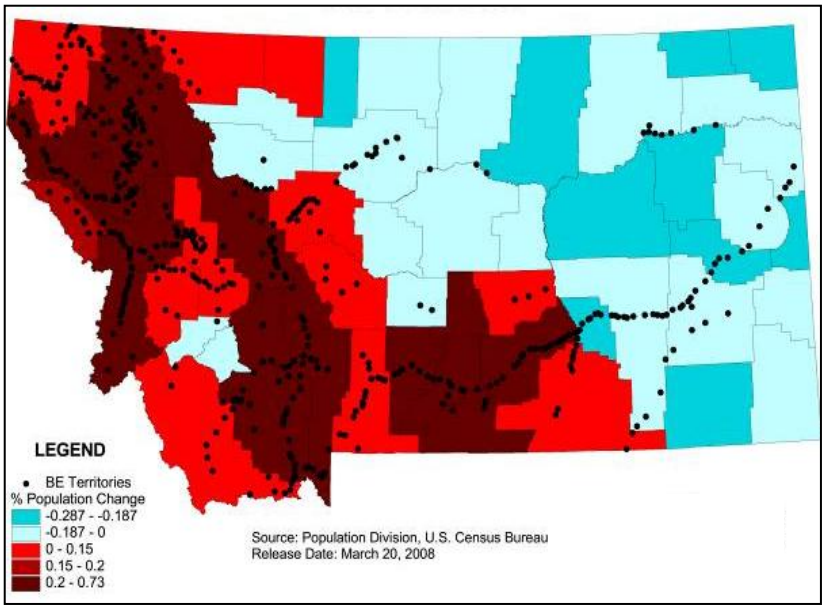

Figure 6. Bald eagle territories and county population growth from 1990 to 2007. Map created by Kristi DuBois.

As human populations in Montana increase the potential for disturbance related impacts to bald eagles also increases. The response of bald eagles to disturbance is variable and closely associated with the type of activity, proximity to the eagle, and the visibility of the disturbance activity, but not all activity is disturbing (Anthony et al. 1994, Anthony and Isaacs 1989, Arnett et al. 2001, Becker 2002, Call 1979, Chandler et al. 1995, Fraser et al. 1985, Grier et al. 1983, Grubb et al. 2002, Grubb and King 1991, Richardson and Miller 1997, Stalmaster and Kaiser 1999, Steidl and Anthony 1996). Many types of disturbance can be avoided or minimized by implementing management strategies that incorporate seasonal restrictions to conduct work outside of the breeding season (Arnett et al. 2001, Anthony and Isaacs 1989, Call 1979, Grier et al. 1983). In situations where the disturbance is still likely to occur during the breeding season distance buffer recommendations can be implemented depending on the type of activity and whether the activity will have temporary or long-term impacts (Anthony et al. 1994, Anthony and Isaacs 1989, Arnett et al. 2001, Becker 2002, Chandler et al. 1995, Fraser et al. 1985, Grubb et al. 2002, Grubb and King 1991, Richardson and Miller 1997, Stalmaster and Kaiser 1999, Steidl and Anthony 1996). Buffer size is usually determined in consideration of the natural visual screening that may obscure direct view from nests.

As biologists continue to observe recreational pressure and expansion throughout the state, there is an apparent need to evaluate those impacts on the state's bald eagle population to ensure that existing conservation strategies are adequate and adjust management strategies when necessary.

Habitat Loss

Providing trees of adequate size for nesting bald eagles is essential for maintaining populations. Since 1991 Montana has had guidelines for managing stands in NW Montana for eagles (MBEWG 1991). Managing stands with current or potential bald eagle nest trees needs to continue to preserve current nesting habitat and cultivate new habitat. Current nest trees may be some of the oldest trees in the stand and replacement nest trees can take from 40 to 100 years to grow.

Nest trees face many dangers including fire, insect, disease, natural loss due to age, lack of cottonwood regeneration due to natural flow regimes, and encroachment by other species. Stands with nest trees need to be managed to provide for healthy nest trees that have the potential to last a long time as new trees grow largest enough to replace them. This may involve management of the adjacent trees to mimic natural stand density. Selection of potential trees and proper thinning around the trees to improve health and proper growing conditions is necessary. This should be done with foresters and biologists working together to meet the objective to maintain the stand characteristics important to eagles (i.e. nest sites, perches). Managers may be able to use this technique to encourage nesting away from conflict areas such as subdivisions, recreation areas, etc. Planting of appropriate seedlings in potential areas should also be considered.

Current stream flow management does not encourage recruitment of cottonwood trees along our major rivers and streams. River management that mimics natural flow regimes with high spring pulses that stimulates cottonwood regeneration would help establish cottonwoods and create and maintain habitat for many other species as well. Without cottonwood recruitment riparian areas will likely become dominated by green ash (*Fraxinus pennsylvanica*) especially in plains ecosystems (Rumble and Gobeille 2004). Forests of green ash are less diverse (Rumble and Gobeille 2004). Green ash also tends to be smaller (with a maximum height of 50 ft and a max DBH of 27.7 in) than trees typically selected by bald eagles for nest locations in Montana (average 99.7 ft tall and 37.8 in DBH; Jensen 1988). Cottonwood management should include measures to protect young cottonwood stands for future recruitment, active removal of encroaching species, and planting of cottonwood seedlings.

Energy Development

Electrocutions or collisions with powerlines pose a serious threat in Montana. From 1979-1997, 20% of known eagle mortalities in the Yellowstone ecosystem (including SW Montana) were powerline related (Harmata et al.1999). Management tools are available to reduce the risk of bird collision and electrocutions (Avian Powerline Interaction Committee 1994, 1996, 2006), but are not used always used.

Wind energy projects are increasing dramatically in Montana. Collisions with turbine blades have been documented as an avian mortality source ranging from low to high (Johnson et al. 2002, Thelander 2004). Depending on project location and design specifics, turbines can present a serious hazard to bald eagles as well as other raptors. Projects placed in migratory corridors or near larger lakes and rivers pose the most serious threat. Recommendations for minimizing

potential negative impacts of energy development on eagles can be found in the 2010 Montana Bald Eagle Management Guidelines.

Contaminants

Lead in the environment poses a potential risk to bald eagles. Bald eagles become susceptible to lead poisoning when they consume waterfowl and fish that have ingested lead fishing weights (Kramer and Redig 1997). They are also at risk of consuming lead when scavenging on game animal carcasses (Harmata et al. 1999). Lead exposure can lead to nervous system problems that hinder an eagle's hunting abilities and make it more susceptible to collisions with powerlines and vehicles and may eventually result in death (Kramer and Redig 1997). Several organizations, including the national chapter of The Wildlife Society, now encourage the use of non-toxic bird shot, bullets, and fishing weights.

Secondary poisoning that results from the use of pesticides (e.g. strychnine, anticoagulants, organophosphates, carbamates, etc.) to manage species such as ground squirrels, prairie dogs, and wild canids is another contaminant concern facing Montana (Harmata and Restani 1995). Pesticides and above ground rodenticides should not be used where eagles are expected to scavenge. To reduce the mortality of bald eagles due to secondary poisoning limit the use of anti-coagulants and other pesticides and ensure all herbicides, pesticides, and fertilizers are disposed of properly.

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